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ABSTRACT

This study was undertaken to determine whether the grade point averages of students at Santa Ana College (SAC) have been increasing over time, and, with an increasing number of work-experience students, whether the work experience grade distribution has had any effect on the grade distribution of the entire college. Results indicate that SAC's overall student grade point average has been increasing during the past four years at an average annual rate of 3.2 percent through the spring term, 1974. The absolute increase since fall 1970 has been 8.9 percent. There has been an 18 percent average increase in "A's" given and a corresponding 18 percent average decrease in "C's" given during the past four years. The number of withdrawals has increased 13 percent on the average during this time period. The percentages of "B," "D," and "F" grades have remained fairly constant. This trend has skewed the college grade distribution to the left, away from the traditional "normal" distribution. Mean grade point average for all students has increased from 2.57 in fall 1970 to 2.80 in spring 1974. Work experience grades were found to have little effect on the rate of increase of the overall college grade point average. (Author/DC)

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SANTA ANA COLLEGE

AN ANALYSIS OF INCREASING GRADE POINT AVERAGES AND THE EFFECT OF WORK EXPERIENCE GRADES ON GRADE POINT AVERAGES AT SANTA ANA COLLEGE

PREPARED BY

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JC 750 143

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I. INTRODUCTION

This is a preliminary report of a study of grade point averages of Santa Ana College students. Today, a general feeling among many educators and college administrators is that grade point averages of students are on the rise. It seems that the trend is away from the traditional "normal" distribution of grades, where a "C" was the dominate grade awarded, to a skewed distribution, where "A's" and "B's" have become more predominate than "C's". There have been some documented examples of this trend. Among colleges in California the increase in grades seems to be most acute at California State College, Somoma. Upwards to 83% of the grades awarded at Somoma are grades of "A and B".[1]

This study will try to analyze the trend of grades at Santa Ana College. Two of the questions that this report will try to answer are:

1. Have the grade point averages of students at Santa Ana College been increasing over time?
2. With an increasing number of work-experience students, has the work experience grade distribution had any effect on the grade distribution for the entire college?

Summer sessions have been left out of this study for two reasons. First, the data were incomplete, and secondly, there is a problem as to whether or not summer session students characterize the typical student population enrolled during the regular school year.

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1. See, Los Angeles Times, March 30, 1974, section 1, page 1, for a detailed story of the raising GPA's at Sonoma.

II. ABSTRACT

This study surveys the grade distribution of Santa Ana College students during the last four years. Also, grade point averages are compared to each other during the eight semesters studied. Then, the effect that work experience grades have had on the overall college grade point average is studied.

This report finds that Santa Ana College's overall student grade point average has been increasing during the past four years at an average annual rate of 3.2 percent through the spring term, 1974. The absolute increase since Fall 1970 has been 8.9 percent.

The distribution of letter grades has also changed during the past four years. There has been an 18 percent average increase for the letter grade "A" and a corresponding decrease of 18 percent for "C's" during the past four years. The issuance of "W's" has also shown an increase during this time period of 13 percent on the average. The grades "B, D, & F" have remained fairly constant since the Fall of 1970. The result of this trend has been to skew the college grade distribution to the left, away from the traditional "normal" distribution.

When work experience grades were removed from the grade distribution of the college, the resultant overall student grade point averages tended to be lower than when work experience students were included in the grade distribution. The analysis of variance statistical test showed that the above differences in grade point averages was not significant. Therefore, we can hypothesize that grades had little additional effect in changing the rate of increase of the overall college grade point average.

III. DISCUSSION OF FINDINGS

A. RISING GRADE POINT AVERAGES

The data were gathered from the Rancho Santiago Community College District report number CR 3209, "Grade Distribution Report". These statistics are reproduced in Table 1 of the present report. A quick study of this chart will show that the percentage of "A's" earned by students and "W's" awarded to students has been increasing during the past four years, Fall 1970 through Spring 1974. The number of "C's" and "WF's" has been decreasing during the same time period. The percentage increase for "A's" is on the average 18 percent over the years, and the change for "W's" is a 12 percent average increase over the years in study. The decreases for "C's" and "WF's" are, on the average, 18 percent and 55 percent respectively. The remaining grade types, "B", "D", "F", "I", "NC", "CR", have remained roughly constant during the Fall 1970 to Spring 1974 time frame. In Graph I, these statistics are presented in graphical form. Basic trends of the particular grade types can be seen from this graph.

The change in grade point averages can best be seen with the use of Table 2. This table records the percentage distribution of letter grades (A, B, C, D, & F) and the corresponding grade point averages for the school terms Fall 1970 through Spring 1974. A study of these statistics will show that the overall grade point average for Santa Ana College has increased from 2.565 in the Fall of 1970 to 2.803 in the Spring of 1974. On a 4.0 grade point scale, this represents an increase of 0.238 grade points or an increase of 8.9 percent, using the Spring 1974 term as the response term and Fall 1970 as the base term. Over the entire time period, Fall 1970 through Spring 1974, the average increase through Spring 1974 term was 3.2 percent.

GRADE DISTRIBUTION REPORT

ALL GRADES

4 YEAR HISTORICAL SUMMARY

Table 1

Percentage Distribution

	A	B	C	D	F	I	Total	W	WF	NC	CR
Spring 1974	22	21	16	3	3	3	67	31	1	0	1
Fall 1973	21	21	17	4	3	3	68	30	1	0	1
Spring 1973	22	22	18	4	3	3	71	27	1	0	1
Fall 1972	19	22	19	4	3	3	70	28	1	0	1
Spring 1972	18	22	19	4	3	2	69	27	2	0	2
Fall 1971	17	22	21	5	4	2	71	23	3	0	2
Spring 1971	15	22	22	4	3	1	70	25	2	0	1
Fall 1970	13	23	21	5	3	2	67	28	3	0	1

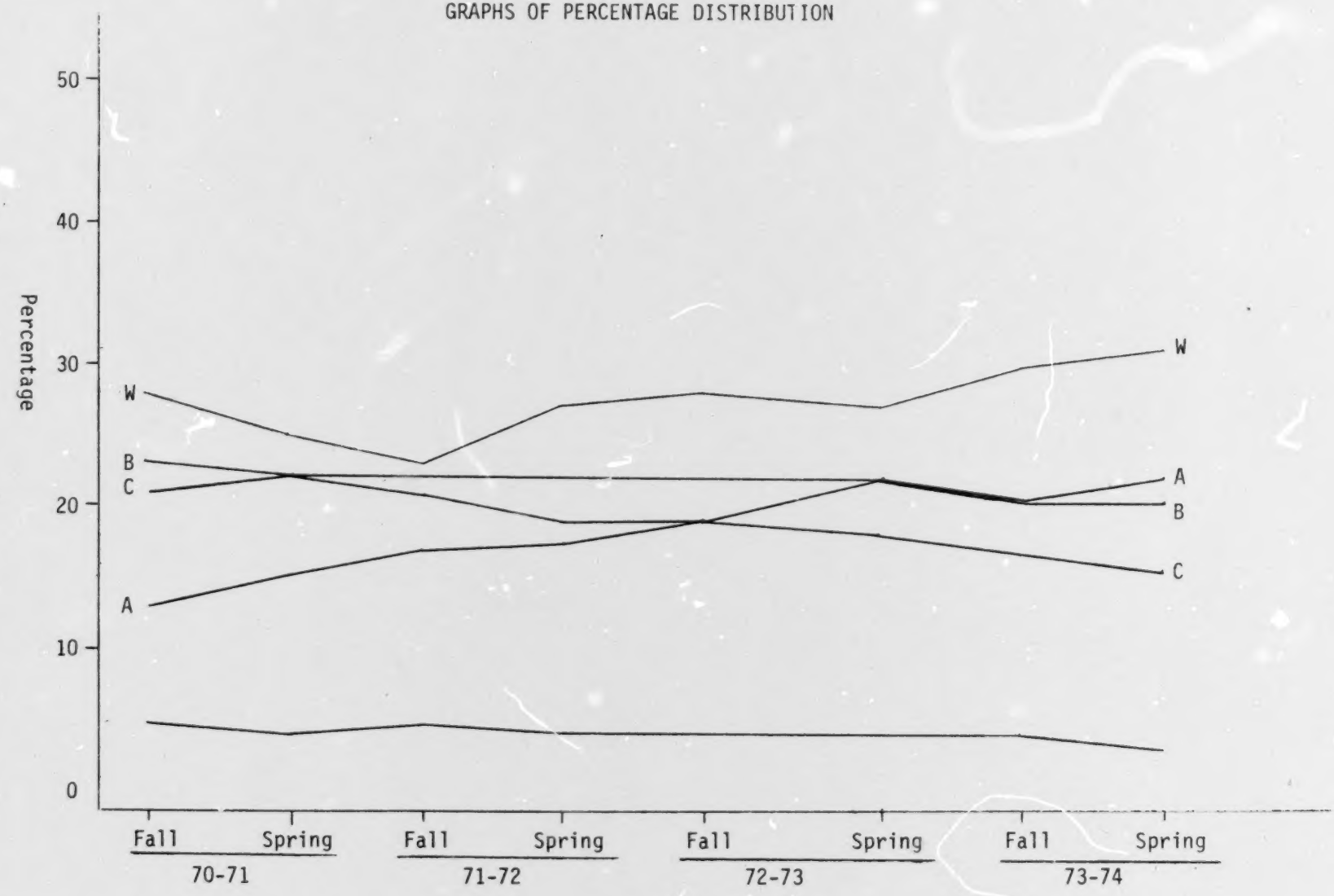
Source: Rancho Santiago Community College District Report #CR 3209

GRADE DISTRIBUTION REPORT

4 YEAR HISTORICAL SUMMARY

GRAPHS OF PERCENTAGE DISTRIBUTION

Graph 1



GRADE DISTRIBUTION - CREDIT GRADES

Table 2

PERCENTAGE DISTRIBUTION*

4 YEAR HISTORICAL SUMMARY

	A	B	C	D	F	MEAN GPA
Spring 1974	32	32	26	6	5	2.803
Fall 1973	32	32	26	6	5	2.803
Spring 1973	32	32	26	6	4	2.812
Fall 1972	28	33	28	6	4	2.746
Spring 1972	27	33	29	6	5	2.727
Fall 1971	25	32	30	7	6	2.623
Spring 1971	23	33	33	6	5	2.636
Fall 1970	21	32	34	8	5	2.565

*Percentages may not add to 100.0 because of round-off errors.

One of the reasons for the increasing grade point averages is the changing distribution of grades as shown by Table 1 and Table 2. In Table 2, the yearly trend shows that the letter grade "A" has been steadily increasing from 21 percent of letter grades assigned in the Fall 1970 to 32 percent of letter grades assigned in Spring 1974. This represents an average increase of 18 percent during this time period. The percentage of "B's" earned by student during this time period has remained constant with some variability. The letter grade "C" has shown the opposite trend of "A's" since 1970. The percentage of "C's" awarded has dropped from 34 percent to 26 percent. This represents an 18 percent average decrease in the number of "C's" awarded over the time period in study. The amount of "D's" awarded during the Fall 1970 to Spring 1974 time period has shown a slight downward trend although not a significant decrease. The distribution of the grade "F" has shown some variability over the years but has remained approximately constant.

Finally, as shown in Table 1, the issuance of "W's" has also increased since Fall 1970. The issuance of "W's" has increased approximately 13 percent on the average during the past four years. The amount of "W's" assigned showed a large decrease in issuance from the fall of 1970 to the Fall of 1971. The percentage of "W's" dropped from 28 percent to 23 percent in this one year period. Therefore, the average increase of 13 percent over the four year time period tends to under estimate the rate of increase of the issuance of "W's" during the last three years.

To show the effect of work experience grades on the college grade distribution, Table 1 has been reproduced as Table 3 with one addition. The grade distributions from Fall 1970 through Spring 1974 of Santa Ana College students have been recalculated with all grades earned by students enrolled in work experience classes removed. These new distributions are enclosed by parentheses as shown in Table 3. Graph 2 traces the trends of the GPA's over the years in study. The GPA with work experience and the GPA without work experience are shown in this graph. With work experience grades removed from the grade distribution, the variability of the letter "A" has decreased two percentage points with the distribution now ranging from 13 percent in Fall 1970 to 20 percent in Spring 1974. This distribution represents a 14 percent average increase during the appropriate time period as compared to an average percentage increase 18 percent when work experience student's grades were included in the grade distribution.

When work experience students were included in the grade distribution, the amount of "C's" showed a downward trend. This also holds true when work experience grades are excluded from the grade distributions. The average decrease over the four years was 13 percent when work experience grades are not included, as compared to 18 percent average decrease when work experience students were included. The letter grades B, D, and F, remained roughly constant for the non-work experience distribution, as when work experience grades were included, although there is some variability in this constancy. These statistics are shown in Table 4.

GRADE DISTRIBUTION REPORT

ALL GRADES

Table 3

4 YEAR HISTORICAL SUMMARY

Percentage Distribution*

	A	B	C	D	F	I	Total	W	WF	NC	CR
Spring 1974	22 (20)	21 (21)	16 (17)	3 (4)	3 (3)	3 (3)	67 (68)	31 (30)	1 (1)	0 (0)	1 (1)
Fall 1973	21 (20)	21 (21)	17 (17)	4 (4)	3 (3)	3 (3)	68 (68)	30 (30)	1 (1)	0 (0)	1 (1)
Spring 1973	22 (21)	22 (22)	18 (19)	4 (4)	3 (3)	3 (3)	71 (71)	27 (27)	1 (1)	0 (0)	1 (1)
Fall 1972	19 (18)	22 (22)	19 (19)	4 (4)	3 (3)	3 (4)	70 (70)	28 (28)	1 (1)	0 (0)	1 (1)
Spring 1972	18 (17)	22 (22)	19 (19)	4 (4)	3 (3)	2 (2)	69 (69)	27 (27)	2 (2)	0 (0)	2 (2)
Fall 1971	17 (16)	22 (22)	21 (21)	5 (5)	4 (4)	2 (2)	71 (71)	23 (23)	3 (3)	0 (0)	2 (2)
Spring 1971	15 (14)	22 (22)	22 (22)	4 (4)	3 (3)	1 (1)	70 (70)	25 (25)	2 (2)	0 (0)	1 (1)
Fall 1970	13 (13)	20 (20)	21 (21)	5 (5)	3 (3)	2 (2)	67 (67)	28 (28)	3 (3)	0 (0)	1 (1)

Percentages may not add to 100 because of rounding errors. The numbers in the parenthesis are the distribution with work experience grades omitted.

Source: Rancho Santiago Community College District Report #CR 3209

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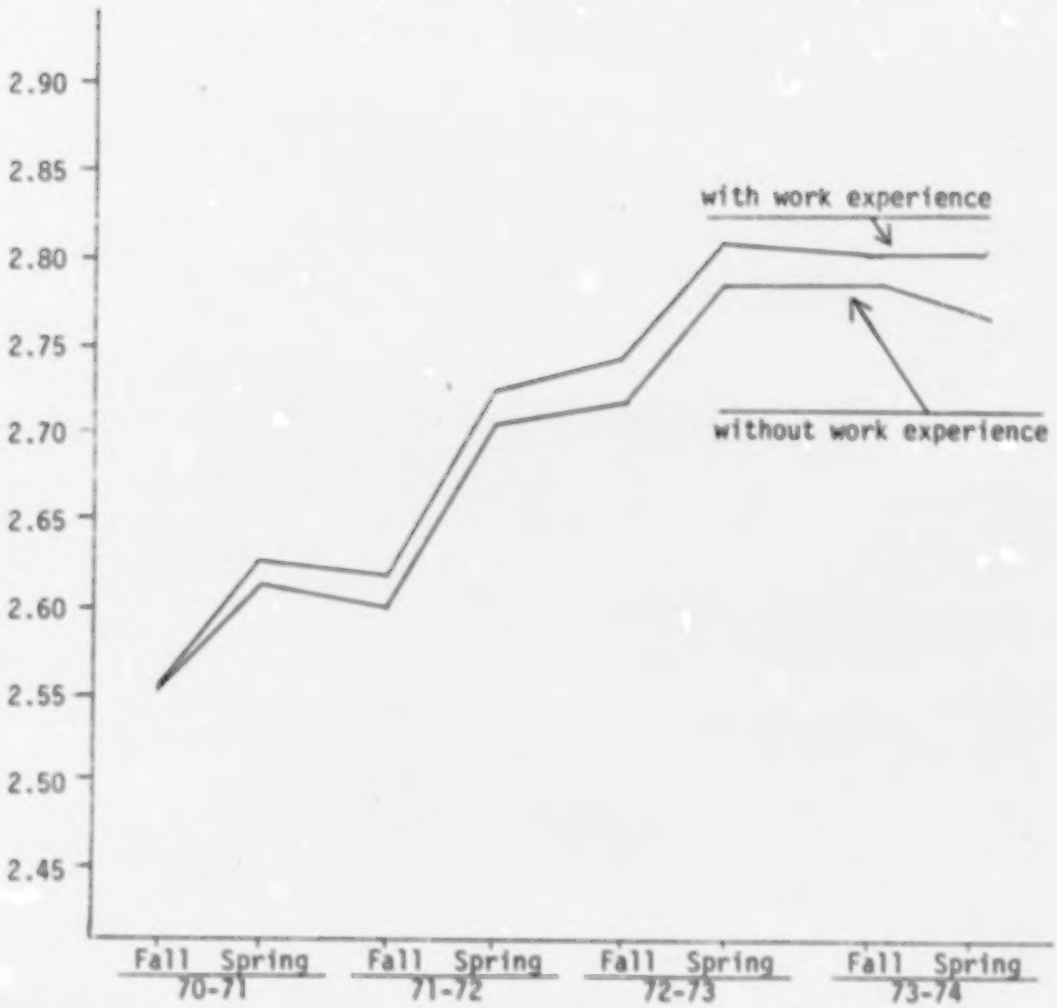
TRENDS OF GRADE POINT AVERAGES Graph 2

With and Without Work Experience Grades



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GRADE DISTRIBUTION - CREDIT GRADES

Table 4

PERCENTAGE DISTRIBUTION*

4 YEAR HISTORICAL SUMMARY

With work experience vs without work esperience[1]

	A	B	C	D	F	MEAN GPA
Spring 1974	32 (30)	32 (32)	26 (27)	6 (6)	5 (5)	2.803 (2.774)
Fall 1973	32 (31)	32 (32)	26 (26)	6 (6)	5 (5)	2.803 (2.785)
Spring 1973	32 (31)	32 (32)	26 (27)	6 (6)	4 (4)	2.812 (2.783)
Fall 1972	28 (27)	33 (33)	28 (29)	6 (6)	4 (5)	2.746 (2.720)
Spring 1972	27 (26)	33 (33)	29 (29)	6 (6)	5 (5)	2.727 (2.707)
Fall 1971	25 (24)	32 (32)	30 (31)	7 (7)	6 (6)	2.623 (2.602)
Spring 1971	23 (22)	33 (33)	33 (34)	6 (6)	5 (5)	2.636 (2.618)
Fall 1970	21 (21)	32 (32)	34 (34)	8 (8)	5 (5)	2.565 (2.560)

*Percentages may not add to 100 because of round-off errors.

[1]The numbers in the parenthesis represent the percentage grade distribution with work experience grades removed.

To display the differences between the grade distribution of letter grades when work experience grades were included and when they were removed from the grade distribution, Graphs 3 and 4 were drawn. These two graphs show the variability between "A's" (Graph 3) and the variability between "C's" (Graph 4) . Graphs for "B's" and "C's" were omitted because of the closeness of the relationships of these grade types whether or not work experience students' grades were included in the distributions.

In summary, work experience grades were removed from the grade distribution of the college, the resultant grade point averages tended to be lower than when work experience students were included in the grade distribution. The mean grade point average when work experience students were included is 2.714. When work experience students are removed from the calculations, the mean grade point average lowered to 2.693. A test for significance was performed using an analysis of variance test. The test showed that there is no significant difference between the grade point averages earned by all Santa Ana College Students, including work experience students' grades, or the grade point averages earned by students when work experience grades were removed from the calculation. Another way to interpret the analysis of variance test is to conclude that the grade distributions of work experience classes have not unduly skewed the college grade distribution further toward a higher overall college grade point average. Complete statistics for the analysis of variance test are presented in Table 5.

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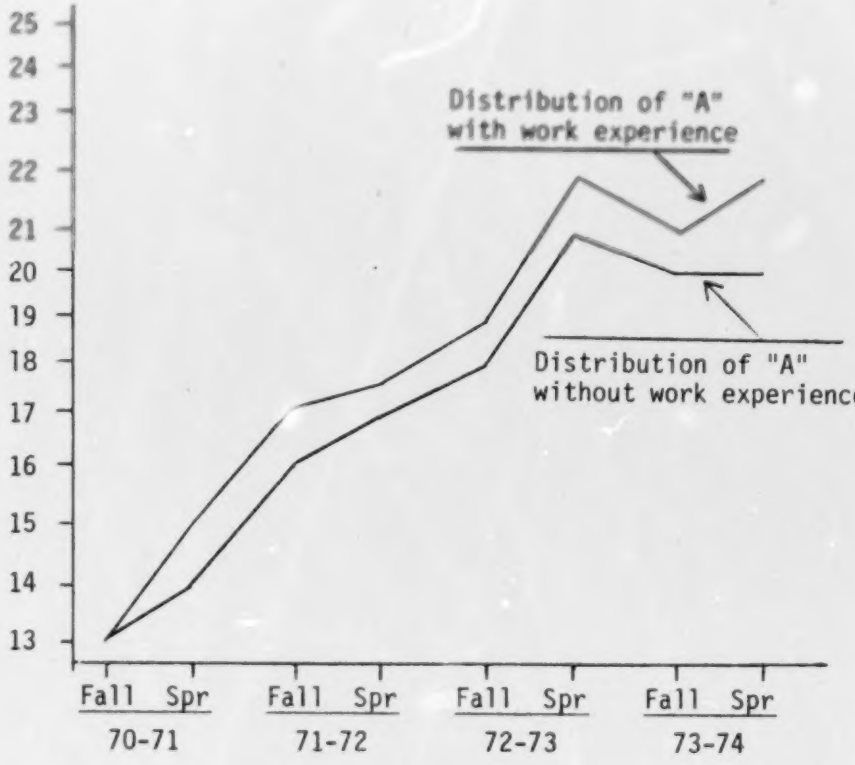
TRENDS OF THE LETTER GRADE A/C WITH

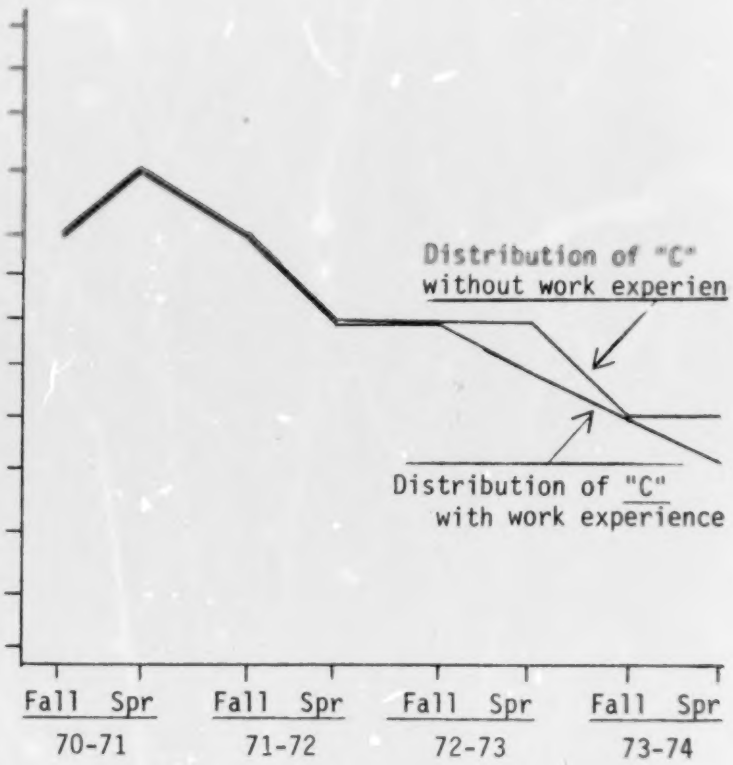
AND WITHOUT WORK EXPERIENCE STUDENTS

INCLUDED IN THE DISTRIBUTION

Graph 3



Graph 4



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ONE WAY AVALYSIS OF VARIANCE
OF GRADE POINT AVERAGES WITH AND WITHOUT WORK EXPERIENCE

R 2500/P BMDO1 STATISTICAL SYSTEM
ANALYSIS OF VARIANCE SECTION
ONE-WAY ANALYSIS OF VARIANCE

ONE-WAY ANALYSIS OF VARIABLE 2 (RESPONSE VARIABLE) USING
VARIABLE 1 (SELECT VARIABLE) AS THE SELECT (TREATMENT) VARIABLE.

SUMMARY OF EACH OF THE 2 TREATMENT GROUPS:

GROUP	VALUE OF (SELECT VARIABLE 1)	ALPHA	NO. OF OBSERVATIONS	MEAN	STANDARD DEVIATION	VARIANCE
1.	1	P		0.271038E+01	0.950217E-01	0.902913E-02
2.	2	P		0.269363E+01	0.891583E-01	0.794884E-02

ANALYSIS OF VARIANCE TABLE

SOURCE	SUM OF SQUARES	DEGREES OF FREEDOM	MEAN SQUARE	F(1, 14)
BETWEEN GROUPS	0.172225E-02	1	0.172225E-02	0.202881E+00
WITHIN GROUPS	0.119044E+00	14	0.849889E-02	
TOTALS	0.120766E+00	15		

THE SELECT VARIABLE NO.1 IS THE GRADE POINT AVERAGES WITH WORK EXPERIENCE STUDENTS INCLUDED.
THE SELECT VARIABLE NO.2 IS THE GRADE POINT AVERAGES WITHOUT WORK EXPERIENCE STUDENTS INCLUDED.

Table 5

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IV. CONCLUSIONS

This study has shown that the grade distribution of Santa Ana College is changing. First, the number of "A's" earned by students has been increasing during the past four years. Secondly, the amount of "C's" earned by students has been decreasing. The remainder of grade types have stayed approximately constant through the years. At the same time, the amount of withdrawals has been increasing since the Fall 1970 term. All these above trends have led to an increasing overall grade point average at Santa Ana College. The grade point average has increased an average of 3.2 percent between the Fall of 1970, and the Spring of 1974.

There has been some concern during the past few years that work experience grades have been having a large positive effect in skewing the grade distribution further toward the letter grade "A". This report showed that when work experience grades were excluded from the college grade distribution, the differences proved to be insignificant. In other words, work experience has had little or no effect in changing the overall college grade distribution.

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